Ascend

Competitive Bulletin

August 1997 Monthly Bulletin

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The August 1997 Monthly Bulletin reviews new Q2'97 remote access market share results from the Dell'Oro Group, and contains updates on recent activities at Bay Networks, Cabletron, Cisco and 3Com.

This document has been prepared by Ascend's Competitive Marketing Group.

Please send any pertinent competitive information to the attention of the Competitive Marketing Group in Alameda.

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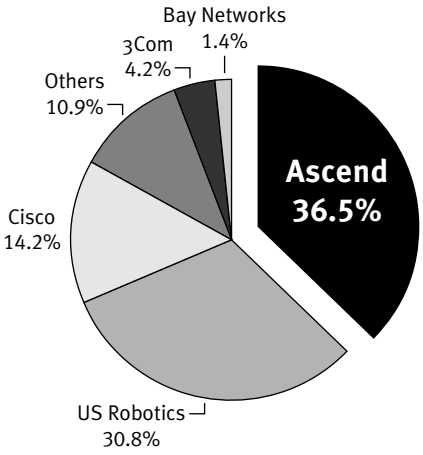
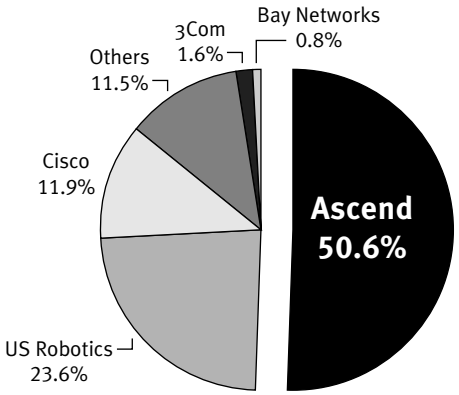
Q2'97 Market Share Results – The Dell'Oro Group Report (8/26/97)

The Dell'Oro Group's market share report for Q2'97 show Ascend is strengthening its lead in the remote access concentrator segment. Highlights from the Remote Access Concentrator report follow:

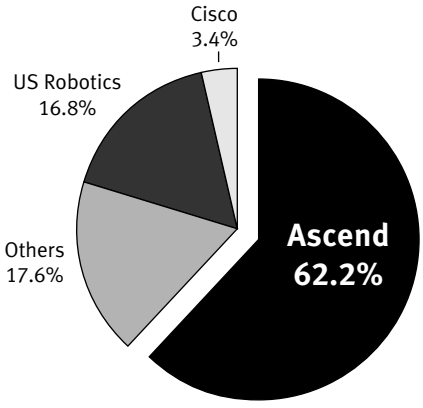
Worldwide Market Share of Access Concentrator Revenues, Q2'97



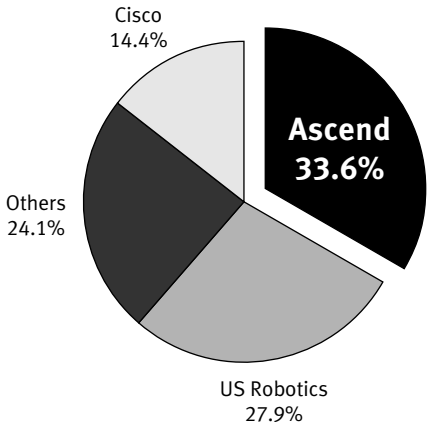
Worldwide Market Share of Access Concentrator Analog Ports, Q2'97



Worldwide Market Share of Access Concentrator ISDN PRI Ports, Q2'97



Worldwide Market Share of Access Concentrator T1 DS-0, Q2'97



Ascend leads the new T1 access concentrator port segment: The Dell'Oro Group started tracking T1 DS-0 market share in Q2'97.

Please watch for an updated presentation with market share results and trends for remote access concentrators, servers and SOHO router segments on the competitive marketing Web site soon.

Bay Networks Update

The Bay 8000 Remote Access Concentrator (RAC)

Bay Networks introduced a remote access concentrator targeted to compete directly with the MAX™ 4048/4060 in the corporate enterprise and midsize ISP segments.

The 8000 Remote Access Concentrator supports up to 48 (or 60 in the E1 version) integrated analog/ ISDN calls, and two WAN interfaces: ISDN PRI (T1/E1) and/or Channelized T1/E1. Bay is promoting its capability to support both x2 and K56Flex technologies using DSP technology (via Penril acquisition). The new RAC product is managed by Bay Optivity and promises to provide VPN services using BayStream Dial VPN (proprietary- although they will support L2TP standard when ratified). The 8000 will list for $19,995. Bay promises availability of this product in October 1997.

Ascend Response

While Bay has had a real hole in its remote access product line – between the Remote Annex 4000 and the MSX 5399 – this new product is too late. It will cost Bay a lot in marketing/sales dollars to buy share in this market. Currently, they have only a 0.8% share of access concentrator ports (analog), and no share in the ISDN PRI market (Dell'Oro Group, 8/97). The Ascend MAX line has been an established player in this market for over four years.

Important Note: While Bay may try to promote its unusual flexibility between x2 and K56Flex, this is a not a real benefit: due to licensing issues, **users cannot run both x2 and K56Flex on the same 8000 box – they must chose one or the other.** Therefore, *customers will have to purchase two boxes if they need to support both 56K technologies.*

Selling Against the Bay 8000:

- **Proven track record and investment protection:** Ascend has the largest installed base of integrated access switches and has been shipping high density access concentrators for over three years. Ascend has installed over 3.5 million digital ports and over 2.0 million digital modems worldwide. Bay has a limited presence in the ISP market. In Q2'97, they had only a 0.8% share of access concentrator analog ports, and no ISDN PRI ports (Dell'Oro Group, 8/97). This new box has no track record in the field.
- **Most comprehensive set of security features:** The MAX supports extended RADIUS dictionary (over 120 enhancements). Bay's recent introduction of the BaySecure Access Control RADIUS server only provides standard authentication, authorization, and accounting services.
- **Dynamic, integrated firewall capability:** Bay offers a third-party firewall only.
- Ensured reliability and call performance: The MAX 4048/4060 supports MNP and MNP 10-EC error correction for cellular calls, V.42bis data compression, and Group 3 fax support (MAXDial™).
- **Integrated software:** the MAX 4048/4060 includes bundled software with Hybrid Access™ 4000, MAXStack , MAXLink Pro™ and MAXDial. Bay's Optivity software is not included – but available at an extra charge.
- **Easy-to-use network management and control:** The MAX features a Java-based configurator.
- **Protocol support includes RIP2 and OSPF:** The Bay 8000 does not support OSPF.
- **VPN support with optional ATMP or Point to Point Tunneling Protocol (PPTP):** Currently, Bay offers only a proprietary VPN solution.
- **Frame Relay Support:** The Bay 8000 does not support Frame Relay.

Nautica 200

Bay will add an entry level IP router to its Nautica line in September 1997 – Bay is promoting it as a "personal" router targeted at the SOHO segment. The Nautica 200 is differentiated from the Nautica CLAM by its two voice-capable analog ports and support for up to four users. The product will have a GUI configurator, and Bay's new remote management software, NauticaWatch. The Nautica 200 is available with either an ISDN S/T interface or an ISDN U interface with an integrated NT-1 and it supports Ethernet 10Base-T (IEEE 802.3 and Version 1.0/2.0). The list price for the Nautica 200 will be $595.

Ascend Response

The Nautica 200 is positioned as a low-cost router, and is intended to compete squarely with terminal adapters and Ascend's Pipeline® 25-*Px*.

Note: Ascend introduced one of the first fully integrated ISDN routers about three years ago and has a very strong presence in this marketplace.

While product specifications are not yet available, it appears that the Nautica 200 does not support Network Address Translation, token-based security or an integrated, dynamic firewall. While the Nautica 200 supports VPN Telephony Dialing (putting voice traffic from the analog port over the VPN), it is unclear what, if any, VPN protocols are supported for data. The Nautica 200 does not support encryption.

Bottom line: The Nautica 200 does not offer a solid value proposition when compared to Ascend's Pipeline products.

	Ascend Pipeline 25-*Px*	Bay Networks Nautica 200
Price (MSRP)		
Price	$695	$595
Key Features		
IP Routing	Yes	Yes
IPX Routing	No	No
Analog (POTS) (RJ11)	2	2
Advanced Calling	Yes	No
Multi-User/Unlimited	Yes	Yes
Multilink PPP Support	Yes	Yes
SNMP Support	No	Yes
Network Address Translation	Yes	No
GUI Configurator	Yes	Yes
Security		
PAP & CHAP	Yes	Yes
Token-based Security	Yes	No
Dynamic Firewall Support	No	No

Note: A more detailed analysis of the Nautica 200 will be included in the Pipeline Series Competitive Bulletin in the next update cycle.

Cabletron's CSX5500

Cabletron is expanding its CyberSwitch line in a defensive move designed to protect their business in the highly competitive corporate enterprise. Cabletron has announced a new access server – the CSX 5500 and two new modem modules the 24-port CSX24+ and 30-port CSX30+. These products are slated to ship in September 1997.

The CSX modem modules are integrated analog/ISDN and support K56Flex. Cabletron will offer an upgrade policy to their CSX-6000/7000 customers that want to trade- up to these DSPs.

Cabletron is promoting the CSX 5500 as a smaller, cheaper RAC solution for those customers that do not need the density of the CSX 6000/7000. The CSX 5500 has an eight-slot passive backplane with a single or dual port Ethernet LAN interface. The chassis will support four WAN modules and one LAN module, but only supports 12 BRI lines or three ISDN PRI lines – or a maximum of 72 calls (90 in E1 version). The CSX 5500 also supports Frame Relay, X.25 and switched 56/64.

The company announcement puts the CSX 5500's list price range at $171 to $699 per port and the digital modems at $479 per port.

Ascend Response

Cabletron is rounding out its line, and adding 56K support to its modems, in an effort to "shore up" its defenses in the corporate market, and in hopes of entering the ISP/carrier space. It is doubtful if any these new products will have a market impact, as Cabletron has no market share in remote access. Moreover, this product does not add any significant value to make a meaningful impact in the marketplace. In Q2'97, they had a 0.2% share of access concentrator analog ports vs. Ascend's 50.4% share, and a 0.1% share of access concentrator ISDN PRI ports, vs. Ascend's 62.2% share (Dell'Oro Group, 8/97).

The CSX line can not compete with the breadth of features and scalable density of the MAX and MAX TNT™ or Ascend's track record.

In addition, Cabletron is confusing the marketplace with too many products and overlaps in the CyberSWITCH product line.

Selling against the CSX 5500

- **Proven track record and investment protection:** Ascend has the largest installed base of integrated access switches and has been shipping high-density access concentrators for over three years. Ascend has installed over 2.2 million digital ports and over 1.5 million digital modems worldwide. Cabletron has relatively no presence in the remote access market – in Q2'97 they had only a 0.2% share of access concentrator analog ports, and 0.1% share in ISDN PRI ports (Dell'Oro Group, 8/97). This new box has no track record in the field.
- **Most comprehensive set of security features:** The MAX supports extended RADIUS dictionary (over 120 enhancements). Cabletron's Secure Fast Virtual Remote Access (VRA) Manager provides limited policy-based management and call accounting features only.
- **Dynamic, integrated firewall capability:** Cabletron does not provide an integrated firewall
- **High degree of scalability and flexibility:** Ascend is the leader in providing scalable and flexible access concentrator solutions. The MAX line (including the MAX TNT™) provides scalable and flexible configurations from 8 to 672 modems and from 4 T1/E1//PRI to T3 connections.
- **High density modem integration and mixed analog/ISDN sessions:** Ascend's MAX line can integrate up to a maximum of 72 modems (MAX 4004) and 672 (MAX TNT) and provide up to 96 concurrent sessions of analog/ISDN (MAX 4004) and 672 sessions (MAX TNT).
- **Multiprotocol support:** Cabletron CSX 5500 does not support RIP2 and OSPF.
- **VPN support with optional ATMP or Point to Point Tunneling Protocol (PPTP):** Cabletron CSX 5500 does not have VPN support.

Cisco Update

Cisco's Centri Firewall

Cisco has announced a new Firewall targeted at small to medium sized business users. The Centri supports FTP, Telnet, Mail and Web-based applications such as Real Audio. Cisco claims that the Centri Firewall is an easy to use security solution, with a 20 minute GUI configurator, for network administrators unfamiliar with security applications. Cisco says that it will incorporate the Centri GUI into its PIX firewall products in the future. The Centri Firewall is based on the Kernel Proxy architecture and the Windows NT operating system.

Cisco expects to release a Japanese version in Q4'97.

US List Pricing:	
Up to 100 users	$3,495
100-250 users	$4,995
unrestricted users	$7,495

Ascend Response

Clearly, this new firewall will overlap with the PIX line, causing product line confusion once again. In addition, it is priced at a premium relative to Ascend's Secure Access™ Firewall.

Ascend's Secure Access Firewall Competitive Advantages:

- **Runs on the Ascend Router platform – No extra hardware required.** The Centri Firewall will require at least a $3-5K dedicated workstation to run on.
- **Not an application level firewall.** Because the Centri is an application level product, it can become a significant bottleneck for traffic.
- **Ascend Secure Access supports all application level protocols.** The Centri only supports a limited set.
- **Faster, one button configuration.** The Ascend firewall takes 10 seconds to set up on the Pipeline when you use Ascend's Java-based Configurator.

GSR Update

At ISPCON (August 21,1997), Cisco provided their customers with the following information on GSR 12004 (4-slot) media card availability (a formal announcement can be expected shortly):

4-port SONET OC-3c/STM-1 (IP over SONET)	End of October 1997
1-port SONET OC-12c/STM-4 (IP over SONET)	End of October 1997
1-port ATM OC-12c	December 1997
Gigabit Ethernet	1998
ATM OC-3/STM-1	1998
SONET OC-48/STM-16	1998

Ascend Response

Cisco's GSR release is still too little, too late. The Ascend GRF™ is market tested and is in full production at major ISPs across the country today. By the time Cisco ships the initial GSR, Ascend's GRF will have been in production for over a year.

The GRF is available today in both a 4-slot and a 16-slot chassis to meet a wider variety of customer needs. Cisco will only have SONET cards ready in initial release. The Ascend GRF supports a more robust suite of high-performance media including ATM OC-3c/STM-1, ATM OC-12c/STM-4, FDDI, HPPI, HSSI and Ethernet 10/100Base-T.

- The Cisco GSR will not support ATM, FDDI, HPPI or HSSI on its initial release in October/November.
- International support/availability has not been announced by Cisco for this product line.

For more detailed information on Cisco's GSR vs. Ascend's GRF, please refer to the competitive flash bulletin on Cisco's GSR (June 1997).

V. 3Com x2 Update

3Com is attempting to speed up the 56K standards process by offering low-cost licensing of its standards-related 56K technology. The company says it hopes that their low licensing prices will force others to offer low terms. The technology 3Com said it holds the rights to was believed to be held by Brent Townshend, but 3Com said it acquired exclusive rights to Townshend's intellectual property in 1995. Concern over who will have to pay how much to whom for the right to make standard 56K modems has interfered with the work of the committee trying to set the 56K specifications. 3Com says it is offering low-cost licensing arrangements in order to "facilitate" the upcoming ITU meeting, in hopes of achieving an early draft standard in September, or January at the latest.

Ascend Response

Perhaps this move signals 3Com's disappointment with x2 sales. Dell'Oro Group market reports show that in terms of upgrades, 3Com/USR shipped about 290,000 56K ports in Q1 and Q2'97, accounting for about $6 million in upgrade revenues (Dell'Oro reports Ascend shipped approximately 275,000 56K port upgrades in Q2'97 alone). However, in terms of new product sales, 3Com/USR is lagging behind Ascend. Ascend shipped over 100K more new analog (DSP) ports in Q2'97, garnering over $28 million more in related revenues than 3Com/USR. In other words, USR's x2 marketing blitz did not succeed in pulling through the desired increase in access concentrator sales.

Ascend's official position regarding the Townshend patents (per 9/8/97 Product Management to Sales):

1. Ascend does not believe that the Townshend patents, if and when they are issued, will be fundamental to 56K technology. The Townshend patent claims are quite broad and many companies and universities have worked on this technology for many years. In fact, Lucent Technology has had 3 patents issued in this area.
2. Ascend is surprised that given 3Com's belief in the importance of 56K technology that the 3Com-Townshend working relationship was kept so quiet during the standard making process. On one hand 3Com says that it wants a standard, but it is obvious that they haven't been open about their relationship with Townshend because as the press release points out, Townshend has been a consultant for 3Com for a number of years. So, in good faith to the industry, Ascend believes that 3Com should publicly reveal what components of the draft standards are based upon the Townshend technology. Then the standards process participants will know what they are getting into.
3. Ascend believes that 3Com's announcement is a tactic to delay the TIA and ITU standards making process. Ascend will continue to push the industry toward a timely and unified 56K standard.

3Com CoreBuilder 9000

3Com is building a new high-end ATM and LAN router based on its Flexible Intelligent Routing Chip Engine. Reportedly, this engine will implement Layer-3 routing in ASICs (applications-specific integrated circuits) and will support IP and IPX, and AppleTalk in software.

Ascend Response

This report is extremely premature; the CoreBuilder 9000 is not even close to being released – we believe it will not ship for production networks until Q4'98 at the earliest. Ascend believes that 3Com is busy getting the CoreBuilder 3000 out the door, which could add further delays to the release of the 9000. The CoreBuilder 3000 is a "glorified" version of the CoreBuilder 2500 with Fast/Gigabit Ethernet and ATM at FCS.

Since 3Com is emphasizing Fast Ethernet and Gigabit Ethernet at FCS, we believe the early 9000 shipments will be LAN routers only. While they may also have an ATM interface at FCS, it will not be WAN-ready. In other words, it will lack many key WAN features such as high VC support, SVC, statistics gathering, and traffic management.

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